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BUREAU OF MINES
U. S. DEPARTMENT OF THE INTERIOR

MINERAL RESOURCE FILMS & VIDEOS

READEX FICHE best copy available

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UNITED STATES DEPARTMENT OF THE INTERIOR

Created in 1849, the Department of the Interior is the Nation's principal conservation agency and is responsible for most of our nationally owned public lands and natural resources. This includes fostering the wise and efficient use of land, water and mineral resources; protecting our fish and wildlife; preserving the environmental and the cultural values of our national parks, monuments and historical places; and providing outdoor recreation opportunities.

The Department assesses national energy and mineral resources and works to assure that their development is in the best interests of all Americans. The Department also has a major responsibility for Native American communities and for people who live in Island Territories under U.S. administration.

Motion pictures and videotape programs, other than those listed in this catalog, dealing with many of the resources and activities under the jurisdiction of the Department of the Interior, are also distributed by the Geologic Survey, the Bureau of Land Management, the Bureau of Reclamation, the National Park Service, the Fish and Wildlife Service, the Bureau of Indian Affairs and other agencies. A list of films and video programs available, as well as printed materials about the Department and its activities, can be obtained by writing to the Office of Public Affairs, U. S. Department of the Interior, Washington, DC 20240.

BUREAU OF MINES AUDIOVISUAL PROGRAMS

Motion pictures and videotape programs distributed by the Bureau of Mines are designed to inform viewers of the importance of minerals in our society and of the need for conservation of these finite resources. Most of the titles listed depict mining operations on the surface and underground, complex physical and chemical processes required to refine mineral ores, and the fabrication and use of products both common and essential to our national life. Many are comprehensive studies of a single mineral commodity, showing how it is found and extracted, how it is refined, and the special properties that make it valuable in our technological society. Others illustrate the significance of minerals and mineral products both now and in the economic, technological and human challenges we will face in the future.

PRODUCTION

The program under which films and videos are produced and distributed by the Bureau of Mines is conducted by the Office of Public Information, Office of the Director, Washington, DC. This program includes both documentaries produced and paid for by the Bureau of Mines, and industry-sponsored films and videos produced in cooperation with public service-oriented industrial organizations. Under cooperative agreements with the Bureau of Mines, industrial sponsors pay all production costs and provide release materials for distribution by the Bureau. All production work is done under the supervision of a professional Bureau of Mines staff producer and reviewed by a special board selected from the technical staff by the Director. Films and videos in this program are free of material or references that could be construed as advertising.

INTERNATIONAL DISTRIBUTION

Selected titles in videotape formats are broadcast via satellite to 184 cities in more than 125 countries on six continents under a cooperative agreement between the Bureau of Mines and WORLDNET, a global television satellite system operated by the United States Information Agency. They are also made available to schools, professional and civic groups, local television stations and cable television systems in these countries through USIA posts and American embassies overseas.

AWARD WINNING SERIES

Many of the films and videos in this program have won major national and international awards in nontheatrical, industrial and educational competition.

TELEVISION BROADCAST

All titles listed in this catalog are available on a short-term, free-loan basis, and have been cleared for television broadcast with the following restrictions—

1. Videos must be broadcast in their entirety, including all opening and closing titles, unless otherwise authorized.
2. Broadcasters may not announce or imply that a Bureau of Mines video has been made available through the courtesy of a commercial client or advertiser.
3. Number of showings and audience estimates must be reported on standard showings report forms included with each booking.
4. Videos may not be excerpted or altered in any way for any purpose without prior written authorization from the Bureau of Mines and/or industrial sponsors holding copyright.

Note: Many titles are not yet available in a broadcast format. Please check the catalog listings carefully before ordering, to make sure the title or titles you want are available in the format you need.

LOAN REQUESTS

Films and videos listed in this catalog are available from the Bureau's central audiovisual library on a short-term, free-loan basis to educational institutions, civic, professional and scientific organizations, cable, commercial and other television systems, and any other responsible group or individual.

Requests for loans from the central library must be in writing, and mailed to—

Audiovisual Library
Bureau of Mines
Cochrans Mill Road
P.O.Box 18070
Pittsburgh, PA 15236

When ordering films or videos, please include the following information—

1. Name of responsible individual.
2. Area code and phone number.
3. Complete film title and catalog number.
4. Preferred and alternate showing dates.
5. Film or videocassette format required.

GENERAL INFORMATION

Costs: There is no charge for borrowing films and videos in this catalog. All shipments from the library are sent prepaid. Borrowers pay return postage only, but are responsible for loss or damage other than normal wear.

Formats: Titles listed in this catalog are available in 16mm and/or 3/4" U-Matic and 1/2"

VHS videocassette formats. Please check the catalog listings carefully before ordering, to make sure the title or titles you want are available in the format you need.

Scheduling: Films and videos can be reserved as much as a year in advance if your order includes a preferred showing date or a period of time during which your showing can be scheduled, such as, "any time during the week of..., the month of..." To insure a booking, especially during the school year when requests are heaviest, one or more alternative showing dates should also be included. Loan requests should reach the library at least two weeks prior to your preferred showing date.

Showings reports: Standard showings report forms are included with each booking and must be filled out and returned with the film or video. Failure to complete and return showings report forms, or failure to return films or videocassettes promptly, may jeopardize your standing as a borrower.

Rewind: Please rewind all films and videocassettes carefully, and return them to the library in the shipping case in which they were received.

Restrictions:

1. A fee may not be charged for viewing a Bureau of Mine's film or video.
2. Films and videos must be shown in their entirety, including opening and closing titles.
3. Films and videos may not be excerpted, altered or duplicated in any format for any purpose without prior written authorization from the Bureau of Mines and/or industrial sponsors holding copyright. Copyright infringement is a violation of Federal law.

Film care: The most common causes of damage to 16mm prints are improper threading and faulty or dirty projection equipment. To avoid film damage, please observe the following—

1. Use a 16mm sound projector only and provide a trained operator.
2. Clean the projector, especially the rollers, gate and film channel. Emulsion deposits left on projector parts harden under the heat of the projection lamp and can cause costly scratches.
3. Thread the projector carefully. To avoid posible damage to opening scenes, test run the projector for a second or two using the leader only.
4. Rewind the film carefully onto the reel supplied by the Bureau, and return it in the shipping case in which it was received.

Videocassette care: The most common causes of damage to videocassettes are improper storage and improper loading into a videocassette recorder/player (VCR). To avoid videocassette damage, please observe the following—

1. Always store a videocassette upright, like a book, away from anything magnetic or that might emit a magnetic field. This includes VCR's, television sets, monitors and some metal shelving. NEVER lay a videocassette flat on a television set, monitor or VCR.
2. Load the videocassette into the VCR gently, and in the direction of the arrow embossed on the cassette case. In most cases, the VCR will do the work once the cassette is introduced.
3. To avoid tape damage, pause the image only when necessary, and then only for short periods of time: 10 to 20 seconds.

4. All videocassettes are cleaned and inspected for tape damage, image dropouts and cracks in the cassette case prior to shipment. If a cassette is accidentally cracked, DO NOT ATTEMPT TO PLAY IT. Return the cassette to the library along with a short note explaining the situation, and request a new booking. The library will assess the damage.
5. Rewind all videoocassetts after showing and return them to the library in the shipping case in which they were received.

Information: For additional information about the Bureau's Industry-sponsored Audiovisual Program, or about individual titles listed in this catalog, please write—

Audiovisual Programs
Office of Public Information
Bureau of Mines
Washington, D.C. 20241

NATIONAL DISTRIBUTION CENTERS

For the convenience of local and regional borrowers, the Bureau also maintains distribution centers throughout the United States under cooperative agreements with designated libraries and educational institutions. State regulations and other conditions may make a nominal handling charge or loan restrictions necessary for copies ordered from local or regional centers. Also, some centers may not carry complete catalog listings or videocassette copies. Please check with your local center before ordering.

Orders received by local or regional centers for titles or formats not in their libraries will be forwarded to the Bureau's central Audiovisual Library in Pittsburgh, PA.

DISTRIBUTION CENTERS

ALASKA

State Film Library, Department of Education
Division of Libraries and Museums
650 International Airport Road
Anchorage 99502

ARIZONA

Cochise County Cooperative Film Library
Drawer 208
Bisbee 85603

CALIFORNIA

Stanislaus County Department of Education
801 County Center III Court
Modesto 95350

Riverside Unified School District
Media Circulation
6666 School Circle
P.O. Box 2800
Riverside 92506

San Bernardino County Schools
Educational Media
601 N. "E" Street
San Bernardino 92410

Orange County Department of Education
Education Media Center
200 Kalmus Drive, P.O. Box 9050
Costa Mesa 92628

CONNECTICUT

Danbury Public Schools
Educational Service Center
49 Osborne Street
Danbury 06810

FLORIDA

Jackson Free Public Library
Art & Music Department
122 North Ocean Street
Jacksonville 32202

INDIANA

Wabash Valley Education Center
3061 Benton Street
West Lafayette 47906

MISSOURI

St. Louis Public Schools
Audiovisual Services
1460 Craig Road
St. Louis 63146-4842

NEW YORK

Educational Communications Center
BOCES
J. W. Harrold Education Center
P.O. Box 455
Plattsburgh 12901

NORTH DAKOTA

North Dakota State Film Library
Division of Independent Study
State University Station
Fargo 58105

OHIO

Cleveland Public Schools
Educational Media Services
1380 E. 6th Street
Cleveland 44414

Tri-County Joint Vocational School
Educational Media Resource Center
Rt. 1, Kimberly Road
Nelsonville 45764

OREGON

Bend Public Schools
1340 NW Wall Street
Instructional Materials Center
Bend 97701

PENNSYLVANIA

Midwestern Intermediate Unit IV
Instructional Materials Services
Grove City 16127

TEXAS

Region XIX Education Service Center
P.O. Box 10716
El Paso 79997

Region IV Education Service Center
P.O. Box 863
Houston 77001

Region VII Education Service Center
Film Library, Vocational Building
P.O. Box 1230
Kilgore 75662

VIRGINIA

State Board of Education
Bureau of Teaching Materials
101 North 14th Street
Richmond 23219

WASHINGTON

Highline School District #401
Learning Resource Center
15675 Ambaum Boulevard,
Southwest
Seattle 98166

Seattle Public Schools
Audio-Visual Department
4141 4th Avenue, South
Seattle 98134

Spokane School District #81
Instructional Media Service
East 4714 8th Avenue
Spokane 99212

WISCONSIN

University of Wisconsin
Bureau of Audiovisual Instruction
1327 University Avenue
P.O. Box 2093
Madison 53701

WYOMING

Natrona County School District #1
Audiovisual Services
130 Glen Road
Casper 82601

CATALOG LISTINGS

256

COPPER
27:30 Minutes

Produced in cooperation with Phelps Dodge Corporation

Available in 16mm, 3/4" U-Matic and 1/2" VHS videocassette formats.

AWARD WINNER: Nine National and international awards including Grand Prize, International Festival of Industrial Films, Brussels; Bronze Medal, International Film & Television Festival of New York; Blue Ribbon, American Film Festival of New York.

The story of copper begins in Egypt, where it first began to replace stone and bone in the tools and weapons of an earlier age. Filmed with the cooperation of the Egyptian Department of Antiquities, ancient tomb paintings, rare museum pieces and a modern bazaar illustrate the role copper played in ushering in the Bronze Age. Centuries later, copper also made possible the Age of Electricity. A flowing montage of dramatic close-ups, accompanied by an original music score, show how the special properties of copper--its ductility, malleability, conductivity and natural beauty--allow it to be shaped, formed and used in so many ways, bringing light, heat, water and information into every corner of our lives. Mining sequences, both underground and in a huge open pit in the American Southwest, dramatize the technological challenge of winning copper from today's low-grade ores. From ores containing less than one-percent metal, to cathode slabs that are 99.99 percent pure, the complex chemical and physical processes required to mill, smelt and refine copper are fully documented in vivid, lyrical sequences.

259

CAST IRON: THE BIOGRAPHY OF A METAL

25 Minutes

Produced in cooperation with the Cast Iron Society

Available in 16mm only

The growth and development of cast iron, from the days of ancient Chinese civilizations to the present, are depicted in this smoothly paced, nontechnical film that covers the varied and important roles played by this metal in our industrial economy and national life. A brief historical sequence, followed by animation and documentary, in-plant photography, reveals how science and technology have changed cast iron from a commonplace and often imperfect material of the past into a whole new family of metals whose properties are carefully controlled to meet exacting specifications. A series of through-the-microscope close-ups show how varieties of cast iron, such as white, gray, malleable, ductile and high-alloy, are formed by controlling the form of carbon in the metal's crystalline structure. The chemical and physical differences that distinguish cast iron from its sister metal, steel, are also illustrated. Each of the most commonly used casting methods--green sand, dry sand, shell, core and permanent molding, and investment or "lost wax" casting now gaining prominence in the missile construction field--are also explained. A step by step series of cut-a-way views showing the preparation, filling and stripping of a mold illustrate the basic principles of iron casting. This sequence is a detailed picture of operations in a modern foundry and features the first known photography of continuous casting in the United States.

265

SILVER
28 Minutes

Produced in cooperation with The Silver Institute

Available in 16mm, 3/4" U-Matic and l/2" VHS videocassette formats

AWARD WINNER: Six national and international awards including Grand Award, International Film & Television Festival of New York; The Chris Award, Film Council of Greater Columbus; Golden Eagle, CINE (Council on International Nontheatrical Events)

This fast-paced, colorful film tells the story of silver in the modern world and the ever-increasing industrial applications of a metal traditionally valued for its luster and beauty. Viewers are taken more than a mile underground in the Coeur d'Alene Mountains of Idaho where elusive, twisting veins of ore make recovery so challenging today. In a historical perspective, old photographs, drawings and music of the post-Civil War silver boom show the importance of silver in the development of the American West, when rich deposits were easily mined with pick and shovel. Modern animation techniques are used to illustrate a variety of intricate metallurgical processes required to separate and refine small amounts of silver from huge quantities of ore. The film concludes on a very important point: although Americans consume about 150 million troy ounces of silver every year, only 40 million troy ounces are produced domestically. As more and more hi-tech applications are found for this noble metal, recycling and conservation become increasingly vital.

266
MINE FIRE CONTROL
26 Minutes

Produced by the Bureau of Mines

Available in 16mm only

Note: Research and field activities depicted in this film were conducted by the Bureau of Mines from August 31, 1954 to March 22, 1982. On that date, responsibility for this work was transferred to the Interior Department's Office of Surface Mining. This film is being retained in circulation as a historical record of the problems encountered and the technology developed by the Bureau of Mines during that period.

Mine Fire Control is the first film to deal comprehensively with a menace little known outside the coal producing regions: the destruction and waste caused by fires in abandoned underground coal mines. On-site photography shows how smoke and gases escape from cracks in the earth to pollute the air, while buildings and roadways collapse into burned-out seams. Accidental ignition and the careless burning of rubbish near coal seams and waste dumps are identified as major causes of underground mine fires. Fire control begins by drilling boreholes into the old mine workings to outline the fire zone and to locate the hottest point in the fire--a valuable clue to its size and intensity. Control methods include excavation, trenching, filling and earth compaction, both individually and in combination, to deprive the fire of the fuel, air and heat necessary for burning. Concluding scenes show how effective fire control benefits the community and the Nation by protecting the environment and conserving a valuable natural resource.

271

THE MINERALS CHALLENGE
27 Minutes

Produced in cooperation with the Natural Resources Division of the Union Pacific Railroad Company

Available in 16mm only

This film tells a conservation story, illustrating new techniques for increasing the recovery of valuable mineral resources in existing deposits, and for making new, low-grade and previously marginal deposits economical to mine. The opening sequence in the Comstock Lode area, the richest gold and silver strike in U.S. history, serves to focus attention on the declining quality of U.S. mineral resources at a time when demand is increasing. The film illustrates how the challenge of recovering mineral values from low-grade ores is being met with modern equipment and advanced technologies. The need for intensive field exploration is explained, as well as new technology like satellite photography for locating new mineral deposits. Following sequences show surface and underground mining of metals, nonmetallic minerals and coal; ore preparation and transportation; petroleum and natural gas operations; and research to extract oil from the vast, untapped oil shale deposits in the West. In conclusion, the film makes it clear that the United States is not running out of minerals. It emphasizes, however, that today's recovery techniques will need further improvement if future needs are to be met. The minerals challenge today lies in the continued development of technologies that will produce the materials we need from the resources we have.

273

THE MOVING EARTH: THE STORY OF MINED LAND SUBSIDENCE CONTROL

27 Minutes

Produced by the Bureau of Mines

Available in 16mm only

Note: Research and field activities depicted in this film were conducted by the Bureau of Mines from October 15, 1962 to March 22, 1982. On that date, responsibility for this work was transferred to the Interior Department's Office of Surface Mining. This film is being retained in circulation as a historical record of the problems encountered and the technology developed by the Bureau of Mines during that period.

This film documents the use of modern technology in an age-old, ongoing effort to control ground subsidence, a serious environmental side effect of underground mining. In opening scenes, the camera explores the subterranean depths of underground mines in Appalachia. Aboard a helicopter, it sweeps across subsidence-pocked landscapes showing both the problem and the toll it takes from the land. In-town photography shows the damage subsidence has caused to homes, roads, commercial buildings and entire neighborhoods in cities over abandoned underground workings. The film then shows modern engineering techniques in which subsidence-prone mines are backfilled while the underground supports are still relatively intact. The backfill material used is typically a mineral waste, fly ash or mine refuse, which creates the extra benefit of clearing land once heaped with unsightly waste materials, making it available for new and better uses.

274

WEALTH OUT OF WASTE
27 Minutes

Produced by the Bureau of Mines

Available in 16mm, 3/4" U-Matic and 1/2" VHS videocassette formats

AWARD WINNER: Techfilm, Pardubicich, Czechoslovakia; Golden Eagle, CINE (Council on International Nontheatrical Events)

This film tells a story of recycling and waste utilization research which holds the promise of turning mountains of rubbish generated by our use-and-discard society into valuable mineral resources. In sophisticated research projects conducted by the Bureau of Mines, urban waste becomes urban ore filled with mineral values that could supplement declining reserves in the United States. Opening sequences of huge municipal dumps, abandoned junk automobiles and accumulated mine and mill wastes establish the dimensions of waste disposal problems across America. The industrial application of research results, in a variety of pilot plants, shows how experimental waste processing techniques have been put to work not only to help solve disposal problems but to produce useful products, like brick, tile and insulation, made from reclaimed materials. In one sequence, the camera follows urban refuse through the intricate processes of an operating recycling plant where it is separated into metals, glass, paper and plastic for reuse. Another sequence documents improved technology being used today to recover metal values in junked automobiles. Moving into rural America the film shows how mining and mill wastes can be stabilized to protect the environment, leveled and planted for reuse, or returned to abandoned underground mines to control surface subsidence. Recycling, the film concludes, is crucial in meeting the challenging conservation problems we face today.

275

TUNGSTEN
18:30 Minutes

Produced in cooperation with Union Carbide Corporation

Available in 16mm only

Location photography and animation illustrate the absorbing story of tungsten, one of the world's most sought after metals.

Its name comes from the Swedish "tung," meaning heavy, and "sten," meaning stone. Minerals containing tungsten are described, and maps identify countries with significant deposits of tungsten ore. Animation helps viewers to understand the special properties of the metal, including its unique structure, which enables it to retain its strength and hardness at high temperatures, and its ability to resist corrosion. Alloyed with other metals, these properties help save time, energy and materials. The film also points out the need to conserve the metal, because the United States has only limited supplies of tungsten-bearing ores. Viewers are taken inside a tungsten mine high in California's Sierra Nevada Mountains for dramatic scenes of ore recovery. The film then documents the conversion of ore into a white powder called ammonium paratungstate, the form in which the element is shipped throughout the world for refinement into tungsten metal. The film concludes with a fascinating sequence on the uses of tungsten, showing the metal and its alloys in such diverse applications as a dentist's painless, high-speed drill, surgical instruments, an industrial bit that can cut through steel, and the balancing weights on helicopter rotors.

277

LEAD IN MOTION

20 Minutes

Produced in cooperation with Lead Industries Association

Available in 16mm only

AWARD WINNER: Oklevel, Muszaki Filmfesztival, Budapest

A fast-paced flow of precise images provides a greater understanding of lead and how its particular properties are linked through the common denominator of the universe--energy; how its ores are extracted from the earth and prepared for smelting and refining; how its commercial applications range from absorbing nuclear radiation to adding the sparkle in lead-crystal glassware. The film shows how lead broadens the usefulness of other metals--in lead-based solders for electronic equipment; in lead alloys for high-speed printing plates; in lead as a lubricating alloy in the machining of steel and bronze. Architectural applications of lead on the outside surfaces of buildings and as damping insulation against noise and vibration, are illustrated. Other sequences reveal lead as a chemical ingredient in compounds that protect against corrosion and form vivid pigments. Lead is easily formed because of its softness and workability at ordinary temperatures. Dramatic close-up photography of lead refining, along with a flowing musical score, becomes a ballet in heavy metal as the viewer watches this unique element being purified and made useful. The camera follows specially made lead grids into battery cells to store electricity. And even when these batteries have been used up, the film explains, the lead inside can easily be reclaimed and used again and again.

278

BORON: LIGHT HEAVYWEIGHT
28 Minutes

Produced in cooperation with United States Borax and Chemical Corporation

Available in 16mm, 3/4" U-Matic and 1/2" VHS videocassette formats

AWARD WINNER: Golden Eagle, CINE (Council on International Nontheatrical Events)

This film features a unique light element that contributes to everyday life in hundreds of important ways. In a bright montage of domestic and industrial scenes, compounds of boron are shown to clean the finest fabrics, retard fire, conduct electricity, grind steel, fertilize certain crops, kill insects and weeds, strengthen glass, fiberglass and plastics, and perform hundreds of other significant although unseen functions in nearly every product and process of contemporary civilization. Introduced into Europe in the 13th century by Marco Polo, it soon became prized as a flux for melting and fusing metals, marking the beginning of a Venetian renaissance in the art and craft of goldsmithing that culminated in the masterpieces of Benvenuto Cellini. Archival photographs of dusty prospectors and the fabled 20-mule teams illustrate the discovery in 1925 of a huge sodium borate deposit in a California desert that made the United States the world's largest supplier of borax. From modern mining and refining techniques to a wide variety of diverse applications, viewers learn there is very little in today's world that does not involve a compound or two of boron, the unique light element that plays such a heavyweight role in our lives.

279

GOLD IN MODERN TECHNOLOGY
28 Minutes

Presented in cooperation with The Gold Institute

Available in 16mm, 3/4" U-Matic and 1/2" VHS videocassette formats

AWARD WINNER: Golden Eagle, CINE (Council on International Nontheatrical Events); Certificate for Creative Excellence, U.S. Film & Video Festival, Chicago. Special 2nd place, OAPM International Film Festival, Sophia, Bulgaria.

Filmed in the United States, Europe and Japan, this film documents four major areas of modern technology—electronics, space exploration, medicine and architecture—where gold, long treasured as a source of beauty, wealth and power, plays a leading role at the cutting edge of progress. In an age of advanced materials like superalloys and synthetics, this ancient metal possesses unique physical and chemical properties that are without equal in many hi-tech developments. In the field of medicine, a clinical team monitors heart function using a radioactive isotope of gold without risk to the patient. In space, gold coatings and shields reflect up to 98 percent of high intensity solar radiation, protecting equipment as well as astronauts. Without gold, the most reflective material on earth, the exploration and use of space might still be a dream. In architecture, gold-coated glass panels not only add rare beauty to modern buildings, they produce a significant savings in energy consumption. Microthin coatings of gold on glass allow clear, crisp visibility, but deflect the sun's heat in summer and conserve central heat in winter. In electronics, gold is an excellent and reliable conductor that will not corrode, even in the hostile environment of space. And in state-of-art microcircuits, gold has no substitute. In one spectacular sequence of microphotography, tiny circuits are wired at high speed with gold thread finer than human hair.

280

PLATINUM: THE ELEMENT Pt
20 Minutes

Presented in cooperation with the Platinum Guild International (USA) Inc.

Available in 3/4" U-Matic and 1/2" VHS videocassette formats only

Filmed in the United States, Europe and Africa, the story of platinum and the platinum group metals—ruthenium, rhodium, palladium, osmium and iridium—begins in antiquity and continues into the technological future. First used in Egypt more than 3000 years ago, platinum was again discovered in the 16th Century in the Choco District of what is now Columbia, South America by the Conquistadors. They called this strange new metal "platina," which means little silver, but apparently gave it no real value. It was more than 200 years later that platinum was finally brought to Europe. Its beauty is illustrated in rare views of exquisite platinum jewelry crafted by the renowned Faberge for the court of the Czars, and of priceless antique Russian coins. The camera then takes viewers to the unique, platinum-rich Merensky Reef in southern Africa, now the world's leading producer of platinum and platinum group metals. In underground mining operations, and in a huge nearby refinery, the video documents ore recovery and the complex chemical and mechanical processes required to refine and separate platinum and the platinum group metals. The film concludes with a series of applications of platinum and platinum alloys that have become vital in the modern world—in catalytic converters to reduce exhaust pollution, in the manufacture of synthetic fibers, in fuel cells to produce energy, in surgical and medical implants that must resist corrosive body fluids, in stainless steel and superalloys, in aviation and navigation systems, and in electronics, investments and many other fields of human endeavor where only the best will do.

281

OUT OF THE ROCK (new)
28:30 Minutes

Produced by the Bureau of Mines

Available in 3/4" U-Matic and 1/2" VHS videocassette formats only

Filmed in the United States and at locations throughout the world, *OUT OF THE ROCK*—designed to be used by itself, or as a lead-in video prior to viewing other titles in this series—takes a broad look at the importance of minerals in the past, present and technological challenges of the future. It explains how everything in the complex, human-engineered environment we call civilization, that isn't plant or animal, is designed, fabricated and used according to the special properties of one or more minerals found in nature; that every aspect of modern life--from living standards to national defense to art, science and industry--depends on a continuing flow of mineral resources. Minerals are finite, the video continues: there is only one crop and one harvest. But a widespread sampling of the earth's crust through international agreements has confirmed that adequate resources exist in the ground to meet human needs far, far into the future...if we manage them well and use them wisely. This means a greater commitment to recycle what we use, and continuing research into the substitution of critical and rare resources with cheaper, more abundant materials like glass, aluminum, ceramics and paper. Environmental issues associated with mining are discussed, along with new technologies developed to help us better understand the geologic history of the earth. The story ends, however, on one of the most pressing questions of our time: the ever-increasing demand for finite mineral resources.

282

CHROMIUM (new)
25 Minutes

Presented in cooperation with American Chrome & Chemicals, Inc.

Available in 3/4" U-Matic and 1/2" VHS videocassette formats only

This is the story of the supreme additive, for which no suitable substitute has yet been found.

Few are aware of the broad and significant role the element chromium plays in modern life. Chrome, once widely used for its decorative and long lasting qualities, has all but disappeared from automobile bumpers, coffee pots, toasters and other appliances; replaced by more abundant, less expensive materials like aluminum and plastics. But chromium hasn't gone away. It has, in fact, found a wide range of more important applications.

Its what makes stainless steel stainless...as well as corrosion proof and heat resistant. Stainless steel is all around us, in flatware and cutlery, in pots and pans, in the superalloy components of jet engines. To protect our health, the Clean Food Bill mandates the use of stainless steel in dairies and commercial kitchens by act of Congress. Chromium salts are used to make the bright and durable dyes and pigments that color almost everything we use: from plastic hair brushes to leather goods...from magazine covers to bull dozers...from high fashion clothing to soup bowls and coffee mugs. Chromium takes its name, in fact, from "croma," the Greek word for color. Chromium compounds are also in the lumber used outdoors for picnic tables, decks, porches and highway sound barriers, helping to protect the wood against insect and weather damage.

283

ALUMINUM RECYCLING: YOUR NEXT ASSIGNMENT (new)

19:45 Minutes

Presented in cooperation with The Aluminum Association, Inc.

Recommended primarily for grades 6 through 9, although suitable for other high school classes as well.

Available in 3/4" U-Matic and 1/2" VHS videocassette formats only

This story begins with a teacher, Ms. Crosby, telling one of her students, Christopher Walls, he must remain after school because he has put off working on a recycling assignment due the following morning. Then she hands Christopher a computer disc, suggesting he use it and the time to work on his assignment. Christopher inserts the disc, and the computer takes on a delightfully magic life of its own, whisking him to a number of locations to "See for himself." Among them are a landfill, a park, a scenic highway, several recycling locations, an aluminum processing center and a can manufacturing plant. Along the way, clear and understandable statistical information reinforces the fundamental message, and Christopher learns that aluminum recycling is a proven technique for conserving energy, protecting the environment...and, that it can be a profitable enterprize for schools and other groups who wish to earn money for special projects. Christopher is not in his seat the following morning, but at the last minute he bursts into the room carrying two bags of used aluminum cans. He turns to the class and says, "You're probably wondering why I'm carrying these bags of aluminum beverage cans..." Of course, we already know what he's going to say, as the screen fades to black.

284

CALL ME CAN (new)
18:20 Minutes

Presented in cooperation with The Aluminum Association, Inc.

Recommended for grades K through 5

Available in 3/4" U-Matic and 1/2" VHS videocassette formats only

Can is a lively aluminum beverage can who calls out one day in a grocery store to a young boy named Dan. Dan buys Can, takes him home, drinks the soda and begins to play a game of catch with Can and Domino, Dan's dog. Accidently, Dan hurls Can into the street just as a steam roller passes, leaving Can as flat as a pancake. Sadly, Dan tells him goodby and puts him in a trash container near the street. But as he nears his house, Dan hears Can calling for help. A couple collecting aluminum cans has picked him up and is carrying him away. Sometime later, Dan hears Can calling for help again, this time as some older boys are kicking him around in the grass. Dan rescues Can, and Can tells him all about how he has been recycled. But Can is lost again, this time falling into a stream and disappearing over a waterfall, yelling, "I'll be baaaaaack..." Dan looks for him everywhere, on store shelves, in trash cans, and finally finds him in a soft drink machine. Can has many new and exciting stories to tell Dan about recycling, and sings a song about how wonderful it is to be made of aluminum, because he can be recycled over and over.

In the end, Dan and Domino must rescue Can again, this time from a landfill, no place for anything aluminum. Then they take him to a recycling center so he can begin yet another new life.